STATE OF TENNESSEE
TENNESSEE AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243

Permit to Construct or Modify an Air Contaminant Source Issued Pursuant to Tennessee Air Quality Act

Date Issued: January 4, 2015

Permit Number:
969528P

Date Expires: November 1, 2015

Issued To:
New Cingular Wireless PCS, LLC dba AT & T Mobility

Installation Address:
2960 Old Horton Highway
Nolensville

Installation Description:
One 50 Kw Diesel-Fired Emergency Generator Equipped with 79 hp Engine (Iveco)

Emission Source Reference No.
94-0374-01
NSPS (40 CFR Part 60 Subpart IIII)
NESHAP (40 CFR Part 63 Subpart ZZZZ)

The holder of this permit shall comply with the conditions contained in this permit as well as all applicable provisions of the Tennessee Air Pollution Control Regulations.

CONDITIONS:

1. The application that was utilized in the preparation of this permit is dated October 22, 2014 and is signed by Jalayna Bolden, Assistant Secretary for the permitted facility. If this person terminates employment or is assigned different duties and is no longer the responsible person to represent and bind the facility in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification shall be in writing and submitted within thirty (30) days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the facility in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

(conditions continued on next page)

Barry R. Stephens
TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

NON-TRANSFERABLE **POST AT INSTALLATION ADDRESS**

2. Stationary Reciprocating Internal Combustion Engines (RICE) as defined in 40 CFR §63.6585(a) are subject to National Emissions Standards for Hazardous Air Pollutants (NESHAPS), 40 CFR Part 63, Subpart ZZZZ. This facility is currently designated as an area source of Hazardous Air Pollutants (HAPs) as defined in §63.6585(c) of Subpart ZZZZ. Pursuant to §63.6590(c)(1) and §63.6595(a)(7), this affected source (which is a new stationary compression ignition engine) must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR part 60 subpart IIII. No further requirements apply for such engines under Subpart ZZZZ. The engine for the emergency generator at this facility is considered to be new because its construction commenced on or after June 12, 2006 and compliance with the requirements of this permit shall be achieved upon initial start-up of this new source.

   40 CFR 63 Subpart ZZZZ, (§63.6590), §63.6590(c) and TAPCR 1200-03-09-.03(8)

3. The rated design power output capacity for this compression ignition engine (Iveco) is **79** horsepower **(59 kW)**. Any increase in this capacity will require a construction permit. This condition is a statement of design power for this source. If a construction permit is applied for, this shall be submitted in accordance with 1200-03-09-.01(1) of TAPCR.

   TAPCR 1200-03-09-.01(1)(d) and application dated October 22, 2014 from the permittee.

4. Only diesel fuel that meets the requirements of **Condition 5** shall be used as fuel for this source.

   TAPCR 1200-03-09-.01(1)(d) and application dated October 22, 2014 from the permittee.

5. The permittee must use diesel fuel that meets the requirements of §60.4207(b) and §80.510(b). The diesel fuel used for the engine is subject to the following per-gallon standards:

   (1) Sulfur content shall not exceed 15 ppm maximum for nonroad diesel fuel.
   (2) Cetane index or aromatic content, as follows:
      (i) A minimum cetane index of 40; or
      (ii) A maximum aromatic content of 35 volume percent.

   The permittee shall maintain purchase receipts, vendor certifications, material safety data sheets, or other records to demonstrate that all fuel purchased for this source meets the requirements of this condition (any fuel labeled as ultra-low sulfur non-highway diesel fuel or ultra-low sulfur highway diesel fuel meets these requirements). These records must be retained for a period of not less than two (2) years and shall be made available to the Technical Secretary for inspection upon request.

   TAPCR 1200-03-09-.03(8), 40 CFR §60.4207, and 40 CFR §80.510(b)

6. Particulate Matter (PM) emitted from the diesel engine shall not exceed 0.40 grams per kilowatt-hour (**0.052** lb/hr).

   40 CFR §60.4205(b) and §89.112, Table 1, Tier 3

7. Carbon monoxide (CO) emitted from the diesel engine shall not exceed 5.0 grams per kilowatt-hour (**0.65** lb/hr).

   40 CFR §60.4205(b) and §89.112, Table 1, Tier 3

8. Combined emissions of oxides of nitrogen (NO_x) and non-methane hydrocarbon (NMHC) emitted from the diesel engine shall not exceed 4.7 grams per kilowatt-hour (**0.61** lb/hr).

   40 CFR §60.4205(b) and §89.112, Table 1, Tier 3

9. Compliance with the particulate matter (PM), carbon monoxide (CO), and combined oxides of nitrogen (NO_x) and non-methane hydrocarbon (NMHC) emission limits in **Conditions 6**, **7,** and **8** are based on compliance with **Conditions 10** and **14** of this permit, and the manufacturer's certification of compliance with 40 CFR §89.112.

10. The permittee shall operate and maintain the stationary CI internal combustion engine according to the manufacturer's written instructions or procedures developed by the permittee that is approved by the engine manufacturer. In addition, the permittee may only change those settings that are permitted by the manufacturer.

TAPCR 1200-03-09-.03(8) and 40 CFR §60.4211(a)

11. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period, and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.01(1)

12. The permittee has designated this source as an Emergency Power Generator. According to a memorandum dated September 6, 1995, from John Seitz, Director, Office of Air Quality Planning and Standards, "EPA believes that **500** hours is an appropriate default assumption for estimating the number of hours that an emergency generator could be expected to operate under worst-case conditions." This value will be assumed to be the maximum operating hours per calendar year for this emergency generator for the purpose of establishing a "potential to emit" for the facility for the pollutants of concern for the engine specified in **Condition 3.** In the event this engine operates beyond this time limit, the total annual hours of operation shall be reported to the Technical Secretary by the end of the calendar year, along with the amount of fuel used, and actual emissions from this unit.

13. The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter (non-resettable electronic means of record is allowed). The permittee must document how many hours are spent for the following categories: (a) emergency operation, (b) maintenance checks and readiness testing, demand response, as specified in **Condition 15**, Paragraph (2); and (c) other non-emergency operation, as specified in **Condition 15**, Paragraph (3). The permittee shall calculate the operating hours per calendar year. The permittee shall maintain the following **log #1** format or an alternative format which readily provides the same required information. The permittee shall retain these records in electronic format for a period not less than two (**2**) years and shall be kept available for inspection by the Technical Secretary or a Division representative. All data must be entered in the log no later than 30 days from the end of the month for which the data is required.

Log #1 - Operating Time for the Emergency Generator Engine Year_____

Emergency Generator Engine I.D. 79 hp (Iveco)

Month	Emergency Operation (hr)	Maintenance Checks, Readiness Testing, & Demand Response (hr)	Other Non-Emergency Operation (hr)
January			
February			
Etc.			
December			
Totals:			

TAPCR 1200-03-10-.02(2)(a)

14. The permittee shall comply with the PM, CO, and (NMHC + NOx) emission limitations by purchasing an engine certified to the emission standards in 40 CFR §60.4205(b) for the same model year and maximum engine power. This certification shall be retained for the life of the engine and shall be made available for inspection by the Technical Secretary or his representative upon request. The engine shall be installed and configured according to the manufacturer's specifications. 40 CFR §60.4211(c)

15. Pursuant to 40 CFR §60.4211(f), the permittee must operate the emergency stationary ICE according to the requirements in paragraphs (1) through (3) of this condition. In order for the engine to be considered an emergency stationary ICE under 40 CFR 60, subpart IIII, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for **50** hours per year, as described in paragraphs (**1**) through (**3**) of this condition, is prohibited. If the permittee does not operate the engine according to the requirements in paragraphs (**1**) through (**3**) of this condition, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(**1**) There is no time limit on the use of emergency stationary ICE in emergency situations.

(**2**) The permittee may operate the emergency stationary ICE for any combination of the purposes specified in paragraphs (**2**)(**i**) through (**iii**) of this condition for a maximum of **100** hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (3) of this condition counts as part of the **100** hours per calendar year allowed by this paragraph (2).

(**i**) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Technical Secretary for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond **100** hours per calendar year.

(**ii**) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary ICE may be operated for up to **50** hours per calendar year in non-emergency situations. The **50** hours of operation in non-emergency situations are counted as part of the **100** hours per calendar year for maintenance and testing and emergency demand response provided in paragraph **(2)** of this condition. Except as provided in paragraph **(3)(i)** of this condition, the **50** hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The **50** hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(a) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(b) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(c) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(d) The power is provided only to the facility itself or to support the local transmission and distribution system.

(e) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

16. The permittee must install a non-resettable hour meter prior to startup of the emergency engine. §60.4209(a)

17. Pursuant to 40 CFR §60.4218, Table 8 to this Subpart shows which parts of the General Provisions in §60.1 through §60.19 are applicable. **(See Attachment A)**.

18. This source shall comply with all applicable state and federal air pollution regulations. This includes, but is not limited to, federal regulations published under 40 CFR 63 for sources of hazardous air pollutants and 40 CFR 60, New Source Performance Standards.

TAPCR 1200-03-09-.03(8)

19. This source shall operate in accordance with the terms of this permit and the information submitted in the approved permit application dated October 22, 2014 from the permittee.

TAPCR 1200-03-09-.01(1)(d)

20. This permit is valid only at this location.

TAPCR 1200-03-09-.03(6)

21. This permit shall serve as a temporary operating permit from the date of issuance to the receipt of a standard operating permit, provided that an application for an operating permit is submitted within the time period specified in **Condition 22** of this permit and that the conditions of this permit and any applicable emission standards are met. TAPCR 1200-03-09-.02(2).

22. The permittee shall apply for a standard operating permit within thirty (30) days of initial start-up of this emission source. TAPCR 1200-03-09-.02(1) and (3)

23. The permittee shall certify the start-up date of the air contaminant source regulated by this permit (one diesel-fired emergency generator engine) by submitting

A COPY OF ALL PAGES OF THIS PERMIT,

with the information required in A) of this condition completed, to the Technical Secretary's representatives listed below:

A) DATE OF START-UP: _____ / ____ / _____
month day year

For the purpose of complying with this condition, "start-up" of the air contaminant source shall be the date of the setting in operation of the source for the production of electric power.

The undersigned represents that he/she has the full authority to represent and bind the permittee in environmental permitting affairs. The undersigned further represents that the above provided information is true to the best of his/her knowledge and belief.

Signature		Date
Signer's name (type or print)	Title	Phone (with area code)

Note: This certification is not an application for an operating permit. At a minimum, the appropriate application form(s) must be submitted requesting an operating permit. The application must be submitted in accordance with the requirements of this permit.

The completed certification shall be delivered to the West Tennessee Permit Program at the address listed below or via e-mail, no later than thirty (30) days after the air contaminant source is started-up.

West Tennessee Permit Program
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L Parks Avenue, 15th Floor
Nashville, TN 37243

Or Adobe Portable Document Format (PDF)
Copy to: Air.Pollution.Control@tn.gov

TAPCR 1200-03-09-.02(3)(b)

(end of conditions)

The permit application gives the location of this source as 35.879139° Latitude and -86.658111° Longitude.

ATTACHMENT A

Table 8 to Subpart IIII Part 60 – Applicability of General Provisions

[As stated in §60.4218, the permittee must comply with the following applicable General Provisions:]

General provisions citation	Subject of citation	Applies to subpart	Explanation
§60.1	General applicability of the General Provisions	Yes	
§60.2	Definitions	Yes	Additional terms defined in §60.4219.
§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4214(a).
§60.8	Performance tests	Yes	Except that §60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§60.9	Availability of information	Yes	
§60.10	State Authority	Yes	
§60.11	Compliance with standards and maintenance requirements	Yes	Requirements are specified in subpart IIII.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	Yes	Except that §60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

CONSTRUCTION PERMIT SUMMARY REPORT

Company Name: New Cingular Wireless PCS, LLC dba AT & T Mobility File Number: 94-0374 EPS Initials: GJF

Permit Number(s): 969528P Source Point Number(s): 01

Application Received (date): 11/5/14 Application Complete (date): 11/5/14

Air Quality Analysis Performed? Yes☐ No☒

Briefly describe the project: (new source, modifications) (what the process is) (type controls proposed) (emissions expected, qualitative) (replacing what sources) (background information)

This new source is one 59 kW (79 hp) (Iveco) internal combustion diesel fired emergency generator engine. This engine will be used only for the purpose of providing emergency electrical power, and allowable emissions limitations are based on an operating time of 500 hours per year. Because of the amount and type of emissions, the use of pollution control equipment is not proposed. PM, SO2, CO, VOC, and NOx, are emitted by this source. According to the application dated November 22, 2014 from the permittee, the diesel engine meets U.S. EPA Tier 3 (NSPS) limits required for engines of this size.

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Rules Analysis

Title V☐ Cond. Major☐ Minor☒ Source category listed in 1200-03-09-.01(4)(b)1.(i)? Yes☐ No☒

Reason for PSD:	New source above ____ TPY ☐	Sig. increase in ____emissions☐	N/A☒
Applicable NSPS:	40 CFR Part 60, Subpart IIII ☒	State Rule 1200-03-16-.____ ☐	N/A☒
Applicable NSPS:	40 CFR 90.103 ☐	State Rule 1200-03-31-.____ ☐	N/A☒
Applicable NESHAP:	40 CFR Part 63, Subpart ZZZZ☒	State Rule 1200-03-11-.____ ☐	N/A☒

Other Applicable State Rules

TSP Emissions:	1200-03-06-.03(2) ☐	N/A☐	NO_x Emissions:	1200-03-06-.03(2) ☐	N/A☒
SO_2 Emissions:	1200-03-14-.03(5) ☐	N/A☐	Lead Emissions:	1200-03-___-.____ ☐	N/A☒
CO Emissions:	1200-03-06-.03(2) ☐	N/A☐	_____ Emissions:	1200-03-___-.____ ☐	N/A☒
VOC Emissions:	1200-03-06-.03(2) ☐	N/A☐	_____ Emissions:	1200-03-___-.____ ☐	N/A☒

SO2, PM, CO, NOx and non-methane VOC emissions limits are based on 40 CFR §60.4207, §60.4205(b), and §89.112, Table 1, Tier 3

Visible Emissions from this Source shall not exceed 20 % opacity per Method 9 TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.01(1).

Emission Summary

Permit Number: 969528P

Source Status: New☒ Modification☐ Expansion☐ Relocation☐ **Permit Status:** New☒ Renewal☐
December 18 review
PSD☐ NSPS☒ NESHAPs☒ **Previous Permit Number:** Construction _____ Operating _____.

	Pounds/Hour			Tons/Year*				Date of Data	*	Applicable Standard 1200-03-
	Actual	Potential	Allowable	Actual	Potential	Allowable	Net Cha			
PM			**0.052**			**0.013***		11/21/14	5	40 CFR, Part 60, §60.4205(b)
SO2			**Neg.**			**Neg.**		11/21/14		40 CFR, Part 60, §60.4207
CO			**0.65**			**0.162***		11/21/14	5	40 CFR, Part 60, §60.4205(b)
NO_x + NMHC			**0.61**			**0.152***		11/21/14	5	40 CFR, Part 60, §60.4205(b),
CO_2e					**24.53**	-		11/21/14		40 CFR 98.30

***These ton per year values are based on an EPA guidance emergency generator default usage of 500 hours per year.**

NSPS requirements are authorized to be included on this permit under the provisions of TAPCR 1200-03-09-.03(8)

Note - SO_2 emissions for fuel with a sulfur content limit of 15 ppm (see condition #5 of Permit No. 969531) are considered to be negligible.

PERMITTING PROGRAM: GJF DATE: December 15, 2014

New Cingular Wireless 94-0374-01/969528P

85 horsepower diesel-fired, emergency generator engine.

Model	Model yr	Max. engine Output hp	*KW	^MMBtu/hr	NSPS regulation (40 CFR X)	MACT?
Iveco	2014	79	59	0.69	89	YES

* 0.74558 kW / horsepower

^ from application

Potential to emit (at 500 hr/yr) for actual emissions- vendor inf.

Pollutant	Factor (gm/hp-hr)	Emissions (gm/hr)	Emissions (lb/hr)	Emissions (tpy)
PM	0.25	19.75	0.04	0.01
NMHC + NOx	4.338	342.702	0.76	0.19
CO	0.9716	76.7564	0.17	0.04

1 lb = 453.592 gram

HAPs totals from diesel combusion

	lb/MMBtu	tpy
Benzene	9.33E-04	0.0002
Toluene	4.09E-04	0.0001
Xylenes	2.85E-04	0.0000
Propylene	2.58E-03	0.0004
1,3 Butadiene	3.91E-05	0.0000
Formaldehyde	1.18E-03	0.0002
Acetaldehyde	7.67E-04	0.0001
Acrolein	9.25E-05	0.0000
PAHs	1.68E-04	0.0000
		0.0011

For SO_2, 15 ppm maximum sulfur content of fuel. Assume all sulfur converted to SO_2

Every mole of sulfur will create one mole of sulfur dioxide

$$S + O_2 \rightarrow SO_2$$

5.05 gal fuel / hr	15 lb S / 10^6 gal fuel	mol S / 32.065 lb S	mol SO_2 / mol S	64.066 lb SO_2 / mol SO_2	0.00015135	lb/hr SO2
from spec sheet	from NSPS	Assume all sulfur converted to SO_2				

GHGs from Fuel oil combusion	CO_2 EF (kg/MmBtu)	CH_4 EF (kg/MmBtu)	N_2O EF (kg/MmBtu)	CO_2e (tpy) =	28.15
	73.96	0.001	0.0001		

CO_2e (tpy) = {[(heat input MmBtu/hr)*(500 hr/yr)*(2.205 lb/kg)]/(2000 lb/ton)}*[(CO_2 EF of 73.96 kg/MmBtu)+(25*CH_4 EF kg/MmBtu)+(298*N_2O EF kg/MmBtu)]

CO_2e calculation has the global warming potentials (GWP) for CH_4 and N_2O incorporated. CH_4 = 25 and N_2O = 298

Emission factors are the default emission factors found in 40 CFR 98 (Greenhouse gas reporting rule), Tables C-1 and C-2.

Spec sheet from Kohler indicates the engine is certified Tier 3

All emission factors from manufacture spec sheet, except for SO2, which is from AP42.

Allowable emissions per engine, 40 CFR 89.112

Pollutant	Standard (gm/kW-hr)	Emissions (gm/hr)	Emissions (lb/hr)	Emissions (tpy)
PM	0.4	23.6	**0.05**	**0.01**
NMHC + NOx	4.7	277.3	**0.61**	**0.15**
CO	5.0	295	**0.65**	**0.16**

1 lb = 453.592 gm

Vendor Factors

0.00948 lb NOx/kw-hr x 338.54 = 3.2 grams NOX per hp-hr

0.00287 lb CO/kw-hr x 338.54 = 0.9716 grams CO per hp-hr

0.00075 lb pm/kw-hr x 338.54 = 0.2539 grams pm per hp-hr

0.00251 lb VOC/hp-hr x 453.59 = 1.138 grams VOC/hp-hr

NOX + NMHC = 3.2 + 1.138 = 4.338 grams NOX + NMHC per hp-hr